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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,603	10/24/2003	Xuqiang Bai	25778	7312

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EXAMINER
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ART UNIT	PAPER NUMBER
2672	

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/691,603	BAI, XUQIANG
	Examiner	Art Unit	
	Eric V Woods	2672	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *24 October 2003*.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-20* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-20* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *24 October 2003* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☒ All   b) ☐ Some * c) ☐ None of:

       1. ☒ Certified copies of the priority documents have been received.

       2. ☐ Certified copies of the priority documents have been received in Application No. _____.

       3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
     Paper No(s)/Mail Date *20050203*.

4) ☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Priority

1.   Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which

papers have been placed of record in the file.

Specification

2.   The abstract of the disclosure is objected to because the first two lines utilize the

terms "a character image extraction extracting ...". The item cited is an apparatus, and

clearly applicant meant it to read, "a character image extraction **unit** ...", et cetera.

Correction is required. See MPEP § 608.01(b).

3 .   Applicant is reminded of the following, which relates to the 'Summary of the

Invention' section and the 'Detailed Description' section:

Content of Specification

(f)   Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary
        or general statement of the invention as set forth in 37 CFR 1.73. The
        summary is separate and distinct from the abstract and is directed toward
        the invention rather than the disclosure as a whole. The summary may
        point out the advantages of the invention or how it solves problems
        previously existent in the prior art (and preferably indicated in the
        Background of the Invention). In chemical cases it should point out in
        general terms the utility of the invention. If possible, the nature and gist of
        the invention or the inventive concept should be set forth. Objects of the
        invention should be treated briefly and only to the extent that they
        contribute to an understanding of the invention.

(h)   Detailed Description of the Invention: See MPEP § 608.01(g). A
        description of the preferred embodiment(s) of the invention as required in
        37 CFR 1.71. The description should be as short and specific as is
        necessary to describe the invention adequately and accurately. Where
        elements or groups of elements, compounds, and processes, which are
        conventional and generally widely known in the field of the invention
        described and their exact nature or type is not necessary for an
        understanding and use of the invention by a person skilled in the art, they

should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication, which adequately describes the subject matter.

4.   The specification is objected to as set forth above, because the 'Brief Summary' section should **not** merely be a recitation of example claims. The 'Detailed Description' section is **not** merely for a recitation of sample / example claims either – the first few pages of this section merely recited sample claims without appropriate explanation of the elements or the reasons behind their presence. Appropriate revision is required, and examiner **strongly** suggests to applicant that redundant information and the numerous recitations of the same example claims be removed, as it does not help or facilitate in understanding the invention and merely makes the specification long and difficult to read.

5.   The disclosure is objected to because of the following informalities:

-Page 11, line 15, the term 'peculiar' is used, where this is not the correct, idiomatic English usage and it is not correct here; examiner suggests replacing the word with 'particular', which would be appropriate. (Standard English definition for 'peculiar' is odd, strange, or different, which is obviously not the intended meaning).

Appropriate correction is required.

6.   The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

7.   Applicant is advised that should claim 3 be found allowable, claims 4 and 5 will

be objected to under 37 CFR 1.75 as being exact and substantial duplicates thereof.

When multiple claims in an application are duplicates or else are so close in content that

they both cover the same thing, despite a slight difference in wording, it is proper after

allowing one claim to object to the others as being substantial duplicates of the allowed

claim. See MPEP § 706.03(k). Examiner is aware that such claims are dependent on

different dependent claims; however, examiner wanted to put applicant on notice of this

fact, because any subsequent revisions or amendments may change the dependency

structure such that this will be an important point. (The same points are made with

respect to claims 7-9, 13-15, and 16-18).

Oath/Declaration

8.   The oath or declaration is defective. A new oath or declaration in compliance

with 37 CFR 1.67(a) identifying this application by application number and filing date is

required. See MPEP §§ 602.01 and 602.02.

> The oath or declaration is defective because:
> It does not identify the citizenship of each inventor, that is, the inventor's country
> of citizenship is given as 'Chinese', which is a description of a generic nationality,
> not a country. Further, it is unclear whether the country of citizenship is the
> People's Republic of China (PRC) or the Republic of China (ROC) a.k.a. Taiwan.
> This must be corrected.

Claim Objections

9.   Claims 3 and 12 are objected to because of the following informalities: the term

"blank" is used repeatedly, where this is not correct, idiomatic English and is not art-

accepted terminology. Correct terminology would be "side, line, portion, or section", and

examiner recommends to applicant to carefully check which is the intended meaning.

Appropriate correction is required.

10.   Claims 7-9 and 16-18 are objected to because of the following informalities:

Roman numerals are referred to as having a "lower-case character" where this does not

make sense. It is believed that applicant is referring to English language characters.

Appropriate correction is required.

11.   Re claims 2-3, 11-12, and 20, examiner respectfully suggests to applicant that

the term "bounding box" be carefully considered to replace "circumscribed quadrilateral"

– the referenced patents in the rejections, particularly Simske and Goodman, clearly

teach their use, and that is the terminology commonly used amongst those of ordinary

skill in the art in American English.

Claim Rejections - 35 USC § 112

12.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter, which the applicant regards as his invention.

13.   Claims 1, 10, and 19 are rejected under 35 U.S.C. 112, second paragraph, as

being indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention.

Specifically, the term "font character space" is a relative term that renders the

claim(s) indefinite, because the term could mean several things, and it is unclear the

desired meaning – whether applicant is referring to the sum total of all characters in a

font or some other range.

Claims 2-9, 11-18, and 20 are rejected as not correcting the deficiencies of their

parent claim(s).

Claim Rejections - 35 USC § 103

14.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

15.   Claims 1, 10, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Kazuyuki (JP 2002-062862 as cited by applicant – full translation from JPO site is

attached) in view of Goodman et al (US PGPub 2001/0033694 A1)('Goodman'). (A

computer program is a trivially obvious variant, and Kazuyuki discloses a computer

program implementation in [0014-0016] and [0030], so the same rejections are valid on

binding on all of the above claims, and method and apparatus are the same thing, and

the same rejection holds.)

As to claims 1, 10, and 19,

An apparatus for handwritten character font generation comprising:

-A character image extraction section configured to extract character image data of

handwritten characters filled into character entry boxes from image data scanned from a

character entry sheet in which the handwritten characters are filled into the character

entry boxes corresponding to respective character codes; (Kazuyuki pg. 4 – e.g.

paragraph [0010], and pg. 5, paragraphs [0011] and [0012], which clearly describe a

character entry sheet in which handwritten characters are entered, and that such

images are scanned using image scanner 5 in Drawing 1, and that such characters are

read out and correlated to their real-world images.)(Goodman teaches OCR techniques

from handwritten data in forms, e.g. census data, in pg. 1, [0003-0005], [0011-0012])

-A character positional information storage section configured to store character

positional information of font character space defined for each of characters; (Goodman

[0085] teaches normalization of detected text, which clearly includes "size

normalization" and word segmentation, which means that OCR is performed on data

sets having known characteristics, e.g. forms. This means that positional information

must *prima facie* be known. Further, the detected information must be stored for

repeated OCR passes to hold the word skeleton information cited in [0084]. Specifics

are provided in [0086-0095], particularly explained with respect to Figs. 9 and 10.

Particularly, in [0089] Goodman establishes that features in cursive handwriting create

two-dimensional vectors with position information, and that the position can be mapped.

Obviously, this teaches storage of positional information for specific characters within

each word skeleton, and the claims are drawn to positional information as well. .

Further, Goodman [0059-0068] teaches the use of preprocessing to deal with

handwritten characters that exceed the size of a normal text box.)(Kazuyuki backs this

position implicitly in [0023] where it is disclosed that characters have different size ratios

and so would need to be size renormalized in any case.)

-A character positional information calculation section configured to calculate the

amount of movement for moving the extracted character image data to a character

position of the font character space defined in the character positional information;

(Goodman [0085] teaches normalization of detected text, which clearly includes "size

normalization" and word segmentation, which means that OCR is performed on data

sets having known characteristics, e.g. forms. This means that positional information

must *prima facie* be known in order to allow size normalization, e.g. resizing, to be

effective, and as set forth in the previous paragraph. Further, since cursive handwriting

is being used, preprocessing is necessary before feeding the data to the OCR engine,

which is why the system as recited performs this task. Further, Goodman [0059-0068]

teaches the use of preprocessing to deal with handwritten characters that exceed the

size of a normal text box.)

-A character position alignment section configured to move the character image data to

the character position of the font character space defined in the character positional

information based on the calculated amount of movement; and (Goodman again

teaches size normalization as set forth above, which would obviously move and resize

data in forms that might be out of a bounding box, e.g. Goodman [0059-0068] teaches

the use of preprocessing to deal with handwritten characters that exceed the size of a

normal text box, and thus move characters [as set forth in [0085-0087] and above].)

-A character font generation section configured to generate font characters of the

handwritten character font based on the moved character image data. (Kazuyuki pgs. 4

and 5, Detailed Description, [0010-0013])

Reference Kazuyuki clearly teaches the first and last elements of the claim –

applicant admits this is the Background section of his specification, and states that

applicant's invention is directed to this resizing of characters, but does not explicitly

teach the middle three elements, e.g. the automatic resizing and movement of characters that are out of position. Reference Goodman is directed to methods of processing written records for optical character recognition (OCR) that have cursive handwriting. Goodman is concerned with, among other things, renormalizing for size [0085-0086] and performing preprocessing to deal with handwriting that falls outside of the bounding box for various reasons [0059-0067]. See also the abstract, where it is clearly disclosed that characters have various sizes and positions, and so OCR software used in this invention must *prima facie* be capable of performing size and positional rescaling and appropriate movement as set forth above.

As set forth above, both references are analogous art and directed to the same problem solving area. The system of Kazuyuki clearly deals with processing input, handwritten characters using OCR techniques based on scanned images, as does the Goodman reference, which is clearly directed to scanned, handwritten images and documents [0003-0008], and the techniques taught by Goodman would clearly help the system of Kazuyuki compensate for characters drawn partially outside of the desired drawing area.

As such, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the inventions of Kazuyuki and Goodman as set forth above, since they are directed to the same problem solving area and clearly the techniques of Goodman would allow the Kazuyuki to rescale characters that were drawn at least partially outside of the desired drawing areas for such characters and use

that information – Kazuyuki may provide this functionality but is silent to it, and

motivation as set forth above in addition.

16.   Claims 2-9, 11-18, and 20 are rejected under 35 U.S.C. 103(a) as unpatentable

over Kazuyuki in view of Goodman as set forth above in the rejection to claim 1, and

further in view of Simske (US PGPub 2004/0017941 A1)('Simske').

17.   As to claims 2, 11, and 20,

The apparatus of claim 1, further comprising

-A character circumscribed quadrilateral calculation section configured to calculate a

circumscribed quadrilateral of a character position of the character image data from the

extracted character image data, wherein: (Goodman [0073] states that each word gets a

bounding box formed around it, and in [0082] a bounding box is used to eliminate stray

marks or similar.)(Simske clearly uses bounding box logic to analyze regions of

document (see Fig. 4 for example). Further, Simske clearly utilizes bounding box logic

to perform the recited calculation, see pg. 2, [0025-0029].)(Kazuyuki clearly utilizes

some kind of method to check for validity of entered characters in the scanned area in

[0035] through [0039], where it is clearly established that the size of the box area

("assignment area" in Kazuyuki) is varied, but it is clear that a bounding box is utilized)

-The character positional information section calculates the amount of movement for

moving the calculated circumscribed quadrilateral position of the font character space

defined in the character positional information; and (Goodman clearly teaches

preprocessing of images prior to OCR and the use of bounding boxes as set forth

above, and Simske clearly justifies the use of a bounding box and its relationship to

OCR to pick out desired areas)

-The character position alignment section moves the character image data to the

character position of the font character space defined in the character positional

information by moving the character portion of the character image data based on the

calculated amount of movement. (Goodman again teaches size normalization as set

forth above, which would obviously move and resize data in forms that might be out of a

bounding box, e.g. Goodman [0059-0068] teaches the use of preprocessing to deal with

handwritten characters that exceed the size of a normal text box, and thus move

characters [as set forth in [0085-0087] and above]. This position is back by Simske and

Goodman as stated above clearly).

Reference Kazuyuki clearly teaches the use of some kind of "assignment area"

that is clearly a bounding box, and Goodman clearly teaches the use of a bounding box

area and size renormalization. Simske teaches the use of bounding boxes to isolate

textual regions for OCR purposes, such as Goodman does so that such regions can be

processed for OCR, as in Goodman, and Kazuyuki clearly establishes that the

processing of the characters requires the components above. It would have been

obvious to one having ordinary skill in the art at the time the invention was made to

combine the OCR and handwriting font generation systems of Kazuyuki and Goodman

with the OCR and bounding box system of Simske as set forth above, and because the

use of bounding boxes is well established in these references – e.g. Simske uses

bounding boxes for isolating textual regions for OCR as in Goodman, and Goodman

teaches use of OCR and pre-processing to sharpen the extraction of character data and

size normalization to compensate for characters drawn partially outside the desired area

of Kazuyuki or oversized ones.

18.   As to claims 3 and 12,

The apparatus of claim 2, wherein

-The character positional information includes information about a ratio of a top blank to

a bottom blank and a ratio of a left blank to a right blank of the circumscribed

quadrilateral in the font character space. (Kazuyuki teaches this limitation in [0023]

where it is disclosed that characters have different size ratios and so would need to be

size renormalized in any case.)(Goodman teaches the bounding box explicitly as set

forth in the rejections to claims 1 and 2 above).

As such, It would have been obvious to one having ordinary skill in the art at the

time the invention was made to combine the ratios of Kazuyuki with the bounding boxes

of Goodman as set forth above because size renormalization is known to take place is

Goodman and is also known to take place in Kazuyuki as characters must be resized.

Clearly, this must be interpreted such that size renormalization also takes care of

positional and orientation issues as set forth in Goodman and referenced in the rejection

to claim 1, and the incorporation of Simske has motivation / combination taken from the

above rejection to claim 2.

19.   As to claims 4-6 and 13-15,

The apparatus of claim 1, wherein

-The character positional information includes information which defines fiducial

characters corresponding to each of specific characters and information which defines a

positional relation between each of the specific characters and each of the position

fiducial characters respectively.

Clearly, reference Kazuyuki teaches this, for example see the Figure on the front

page of the abstract or Drawing 2 (or 3), which clearly shows the specified fiducials or

characters in row (a), and the handwritten version in row (b) below. The position or

location of the fiducials is specified as set forth in the Drawing. Specifically, the layout

of the sheet on which the characters are displayed is known, and clearly a specified

layout clearly establishes positional relationships between all relevant characters. Since

only the primary reference is utilized, no separate motivation or combination is required

and that from the rejection to the parent claim is herein incorporated by reference.

20.   As to claims 7-9 and 16-18,

The apparatus of claim 4, wherein the specific characters includes voiced sound

characters among Hiragana characters and Katakana characters, p-sound characters

among Hiragana characters and Katakana characters, and Roman numerals of a lower-

case character.

Reference Kazuyuki teaches all these limitations, specifically the use of

Katakana characters in [0022], the use of Hiragana characters in [0026], Roman

numerals and letters of both cases in Drawing 4, and it is presumed that drawings 5 and

7 reflect Japanese characters in both cases as well as p-sound characters and voiced

sound characters, which are known to those of ordinary skill in the art to be among

generally written Katakana and Hiragana characters. Kazuyuki contains these, and

applicant's invention is stated to be basically an improvement of the Kazuyuki invention.

In any case, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to so modify the invention of Kazuyuki (if necessary) to include

such characters, as they represent a large portion of the Japanese character set that

would obviously be desirable to have for writing. Motivation and combination from the

rejection to claim 1 is herein incorporated via reference for any supporting elements.

(For secondary issues, e.g. incorporation from dependent claims farther down the claim

tree where the Simske reference is used, motivation and combination are taken from

the rejection to claim 2 above.)

Conclusion

21.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure:

US 5412771 A (Fenwick)

US 5649026 A (Heins)

US 6023534 A (Handley)

US 6298154 B1 (Cok)

US 6621941 B1 (Syeda-Mahmood et al)

US 6665422 B1 (Seidel et al)

US 20020102022 A1 (Mat et al)

US 20030016869 A1 (Laumeyer et al)

US 20040140977 A1 (Hakamada, Junichi).

22.   Further, applicant is strongly urged to consider 2004/0140977 A1, as it discloses subject matter that is very similar to that of applicant, if not identical, and it was filed within a month of applicant's filing date.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric V Woods whose telephone number is 703-305-0263. The examiner can normally be reached on M-F 7:30-5:00 alternate Fridays off.
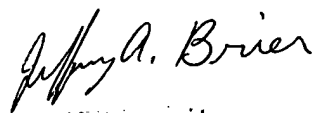
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on 703-305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eric Woods   7 February 2005

JEFFERY ....
PRIMARY EXAMINER